QGIS Mapping network

I. Use of GPS

- 1. Turn on the GPS
- 2. Go to Satellite (go up using the front cursor), wait until the text "Acquiring satellite" is replaced by the latitude and longitude position.
- 3. Go back
- 4. Go down to Mark Waypoint
- 5. An automatic number appears at the top, take this number on your notebook in front of the name of the structure you are checking.
- 6. Click on Done

The waypoint is saved in the device, we will see later how to download it on the computer.

II. Quick overview of QGIS

1. Install QGIS by double clicking on the install files :

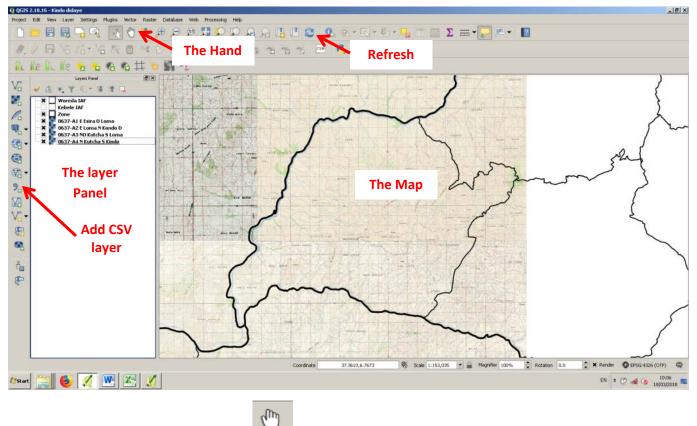
QGIS-OSGeo4W-2.18.16-1-Setup-x86_64.exe

2. Open QGIS project. Example :Kindo Didaye.qgs

A QGIS project is like an index that store the path to all the map and points, the actual map and points are each stored in a separate file. To copy all the project to another computer all the QGIS folder must be copied.

1. The map

Your screen should look like the following picture



To navigate on the map, select the hand

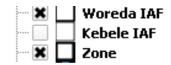
, click on the map and move the mouse.

To zoom in and out use the mouse wheel.

2. The layer Panel:

This panel lists all the layers that are shown on the map. On the Map, the top layers appear on top of the bottom ones. Here we have:

> 3 borders layers (In QGIS it is called polygon under the vector layer category)



The Woredas and Kebele borders and name appear when the map is zoomed in.

4 topographic maps (these are images that are called raster layers in QGIS)



III. Showing GPS point on the map

- 1. Plug the GPS on the computer
- 2. Go to: Computer \rightarrow Garmin eTrex \rightarrow Garmin \rightarrow GPX \rightarrow Waypoint_date.gpx
- 3. Copy the file in your computer (the best is to copy it under QGIS folder)
- 4. Rename it to a more meaning full name
- 5. Open it

To Open it the first time follow this procedure:

a. Open \rightarrow select a program from a list of installed programs \rightarrow OK

Windows	×
Windows can't open this file: File: Kindo didaye.qgs~	
To open this file, Windows needs to know what program you want to use to open it. Windows can go online to look it up automatically, or you can manually select from a list of programs that are installed on your computer.	
What do you want to do?	
O Use the Web service to find the correct program	
Select a program from a list of installed programs	
OK Cancel	

 \rightarrow Choose Microsoft Excel \rightarrow OK

- b. Or Right click on the file \rightarrow Open With \rightarrow Choose default program \rightarrow OK
- 6. Click Yes or OK to the first 3 or 4 questions excel asks before opening the file
- 7. You can now arrange the file to suit your need:
 - a. You can delete unnecessary column but you must keep: lat (latitude), lon (longitude), ns1:ele (elevation) and ns1:name (the name of the point in the GPS)
 - b. You can add some columns, such as Name of structure, type of structure, nb of household
- 8. Save the file as csv: File \rightarrow Save as
 - a. In Save as type: choose CSV (Comma Delimited)(*.csv)
 - b. In File name: choose a meaning full name such as Patata network

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Click on Save then on Yes and OK to the two next questions Excel asks

9. In QGIS open the file: click on Add Delimited Text Layer

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Choose your file by clicking on Browse then click on Ok

A new layer	should appear in the layer panel :		🗙 🔹	Waypoin	te 1	5-FFR-18 waynoints
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You can choose the **point color**.

Click on Labels \rightarrow on the top drop down list select: Show labels for this layer

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🞸 Rendering		
🧭 Display		

Click on Label with: \rightarrow Choose the column that contains the structure name.

In abc Text	choose Style \rightarrow Bold; Color \rightarrow the same as the point color.
In abc Buffer	Click on
In 🔅 Placement	on Distance write 1

Modifying the CSV file

You can open the CSV file with excel to modify it. The first time you want to open it you must follow the same procedure as for the GPS file.

You can update data (for example the number of latrines), you can add lines (for example by copying data from

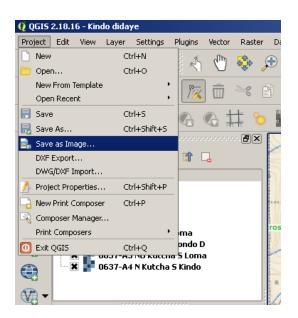
another GPS file). To show the change in QGIS, just click on Refresh



Careful: if you change the columns (add or remove columns, change their name), the point will not show anymore in QGIS and you will have to restart to step 9.

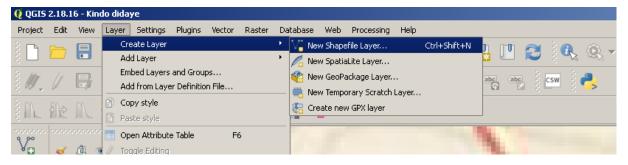
IV. Easy Printing

- 1. In QGIS : Click on Project \rightarrow Save as Image
- 2. Give a name to the image and save it: you will be able to open it as a picture.



V. Drawing the pipeline

1. Click on Layer \rightarrow Create Layer \rightarrow New Shapefile Layer



2. Select Line \rightarrow OK

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- 3. In the save layer as dialog box, give a name to your layer, for example Patata pipeline \rightarrow Save
- 4. The new layer appears in the layer panel
- 5. Right click on it \rightarrow Toggle Editing. The functions in the digitizing toolbar appear:



- 6. Click on Add Feature
- 7. Click on the start of the pipeline and then click on the end of the pipeline. Then right click.
- 8. A dialog box will appear click OK, the first line is drawn
- 9. Restart to step 6 to add new line
- 10. To move an existing line click on Node Tool VA, clie

, click on a line endpoint and drag it to its new place.

- 11. Once the pipeline is drawn click on Toggle Editing and click on Save.
- 12. You can then right click on the pipeline layer in the layer panel and in Properties→ Style choose your line color and width (thickness).